



# Dye system using nitrogen

The laundry smart evolution !

# Nexia and Archroma sustainability is in the air



The synergy between Nexia, one of the leading companies in the production of industrial machines for the washing and dyeing of garments and textiles, and Archroma, a global leader in sustainable specialty chemicals, aims to reach high level objectives never before reached within the entire dyeing process. The high quality technical results are evident in terms of stability and reproduction,

with textiles treated according to the fibers utilized, resulting in a softness in the yarn and harmonious shades in natural tones. There is also a significant reduction in the amount of water and energy used, together with a net decreased in waste emissions into the environment. Nexia and Archroma's synergy brings about a breath of fresh air, above all clean air, into the textiles world!

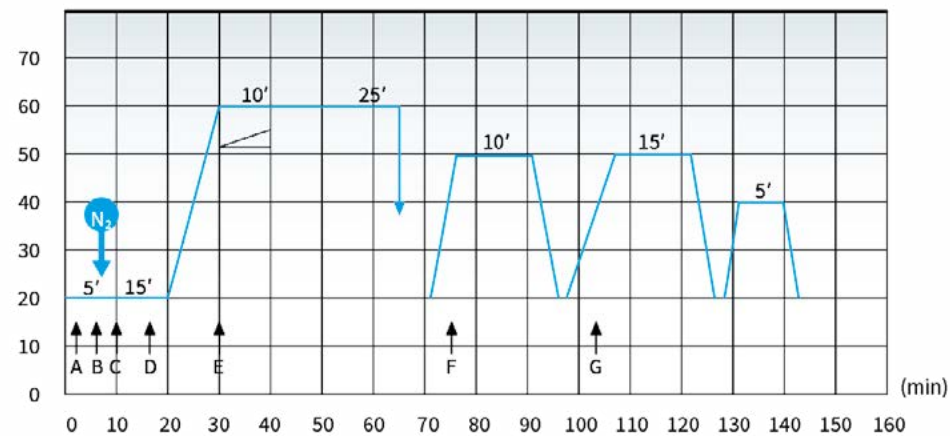


**Diresul® RDT dyes are pre-reduced liquid sulfur dyestuffs with minimal sulfide content offering high versatility in application process, and suitable for more ecological dyeing.**

Archroma is continuously improving manufacturing processes and also developing new products and application processes that enhance the already high performing dyes. Archroma offers this experience to the textile market as a contribution to a more sustainable dyeing environment.



**Diresul® RDT garment dyeing under nitrogen atmosphere (Recommended technology)**



<b>A</b> 25 g/l Glauber's Salt (solid)	<b>D</b> 8-10% Reducing Agent D p*	<sup>1</sup> Recommended concentration > 2% dyestuff
<b>B</b> 0.3% Leonil® EHC liq c	<b>E</b> X% Diresul® RDT liq <sup>1</sup>	
0.5% Dekol® 2005 liq c	<b>F</b> 0.5% Lyogen® NH liq	* It is recommended to apply Cyclanon® MSA p in case of conventional application without nitrogen
0.3% Antimussol® UDF liq	0.1% Acetic Acid 80% (pH 6-7)	
<b>C</b> 8-10% Caustic Soda 50%	<b>G</b> 1.5-2% H <sub>2</sub> O <sub>2</sub> 50%	
3-5% Soda Ash	1.5-2% Acetic Acid 80% (pH 4-4.5)	

**Advantages of the N2 system**

- Extremely high quality standards
- Excellent performance
- Reliability and durability
- Improved repeatability of results
- Lower electricity, water and chemical consumption, which reduces environmental impact

**Garment dyeing with Diresul RDT liq dyes"**

- Sulphide free reducing system
- Particularly suited to medium and high intensity shades
- Peroxide-based, eco-friendly oxidation
- Greater dyeing stability producing more even results that are easier to reproduce.
- Dyeing is superficial, giving a worm look without damaging the fiber
- Striking effects and contrast can be produced by using chemical and physical wash-down after dyeing

**The entire process is "eco-friendly"**

- Processing in a Nitrogen atmosphere with low liquor ratio to reduce chemical use
- The dyeing temperature can be reduced
- Water and energy consumption are drastically reduced
- Process is "cleaner" and safer for workers
- The machine does not stain as easily, making maintenance simpler



**Color palette for the Nexia Nitrogen System coloring process**

	<b>Diresul®</b> Yellow RDT – E liq
	<b>Diresul®</b> Orange RDT – 3G liq
	<b>Diresul®</b> Brown RDT – ZN liq
	<b>Diresul®</b> Brown RDT – ZS 150 liq
	<b>Diresul®</b> Brown RDT –R liq
	<b>Diresul®</b> Bordeaux RDT-6R 120 liq
	<b>Diresul®</b> Olive RDT-B 150
	<b>Diresul®</b> Caribbean Blue RDT liq
	<b>Diresul®</b> Pacific Blue RDT liq
	<b>Diresul®</b> Arctic Blue RDT liq
	<b>Diresul®</b> Smartdenim Blue liq
	<b>Diresul®</b> Blue Black RDT – 2B liq
	<b>Diresul®</b> Black RDT – 2KS liq



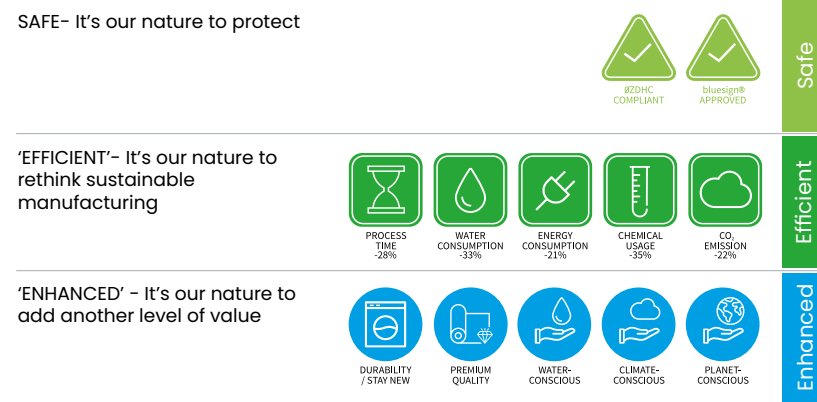
Thanks to Nexia technology it will now be possible to avoid the use of very dangerous chemical substances such as sodium hydrosulphite and drastically reduce others such as sodium hydroxide.



**The new ND series** is designed to carry out low-cost dyeing cycles with very short processing times, using sulfur and indanthrene dyes. [About 70 minutes and 60-65 degrees C.]

The machine, thanks to the use of N<sub>2</sub> in an airless environment, will be able to exploit the application of all those dyes which until now have used oxygen as a form of reduction and fixation of the color on the fibre. In this way the garments dyed with this innovative process result in a full, intense and long-lasting colour. In addition, it will be possible to ensure color reproducibility between batches.





The collaboration between Nexia's ND 17 Nitrogen machine that works under Nitrogen color for smart Atmosphere and Archroma's CASUAL x SMART\* system delivers smart and authentic fashion collections with trendy wash-down looks without compromising our planet.

CASUAL X SMART is Archroma's sulfur dyeing system that uses "best-in-class" selection of dyes and dyeing auxiliaries.





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# Innovative and sustainable laundry solutions